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MISSILE-X PROGRAM LOGISTIC ELEMENT MANAGEMENT PLAN FOR RELIABIL--ETC(U)  
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TECHNICAL NOTE

MISSILE-X PROGRAM  
LOGISTIC ELEMENT MANAGEMENT PLAN  
FOR  
RELIABILITY INTERFACE LEM

15 August 1977



Prepared for

DEPARTMENT OF THE AIR FORCE  
SPACE AND MISSILE SYSTEMS ORGANIZATION (AFSC)  
ICBM Program Office

Under Contract F04606-76-A-0087-R901

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MISSILE-X PROGRAM  
LOGISTIC ELEMENT MANAGEMENT PLAN  
FOR  
RELIABILITY INTERFACE LEM.

(11) 15 August 1977

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One of 12 LEM Plans  
Prepared for

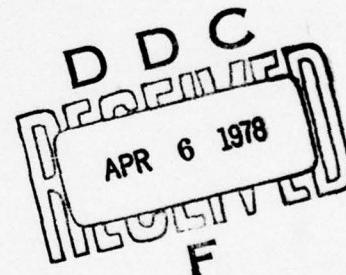
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LOGISTIC ELEMENT MANAGEMENT PLAN  
FOR  
RELIABILITY INTERFACE LEM**

15 August 1977



**SPACE AND MISSILE SYSTEMS ORGANIZATION  
AIR FORCE SYSTEMS COMMAND**

**Prepared by  
Logistics (MNL)  
Deputy for Intercontinental Ballistic Missiles**

MISSILE-X PROGRAM  
LOGISTIC ELEMENT MANAGEMENT PLAN  
FOR  
RELIABILITY INTERFACE LEM

15 August 1977



Approved \_\_\_\_\_

Date \_\_\_\_\_

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## FOREWORD

This Reliability Interface Logistic Element Management Plan is one of twelve plans supplementing the guidance and direction for the Integrated Logistic Support (ILS) program as delineated in the Missile-X Integrated Logistic Support Plan (ILSP). Whereas the ILSP provides general guidance and direction for integrating all logistic elements into the overall program requirements, this plan treats the specific actions, milestones, and coordination efforts of the Logistic Element Manager for the Reliability Interface. It has been written to assist him in fulfilling his responsibilities toward achieving the ILS objectives of the MX Program.

The majority of information contained in Sections 1 through 4 herein is common to all plans. Sections 5 and 6 present information pertinent to the R-LEM's efforts.

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## CONTENTS

|  |     |
|--|-----|
| <b>FOREWORD</b>  | ii  |
| <b>1. INTRODUCTION</b>                                 | 1-1 |
| 1.1 Background   | 1-1 |
| 1.2 Purpose  | 1-2 |
| 1.3 MX Program   | 1-2 |
| <b>2. SCOPE</b>  | 2-1 |
| <b>3. REFERENCE DOCUMENTS</b>                          | 3-1 |
| <b>4. PROGRAM MANAGEMENT</b>                           | 4-1 |
| 4.1 ILS Program Organization                           | 4-1 |
| 4.1.1 Deputy Program Manager for Logistics             | 4-1 |
| 4.1.2 Logistic Element Managers                        | 4-2 |
| 4.2 ILS Management Information System                  | 4-4 |
| <b>5. GENERAL REQUIREMENTS</b>                         | 5-1 |
| 5.1 Integrated Logistic Support Program                | 5-1 |
| 5.2 Reliability Interface Logistic Element             | 5-3 |
| <b>6. R-LEM RESPONSIBILITIES AND TASKS</b>             | 6-1 |
| 6.1 Responsibilities                                   | 6-1 |
| 6.2 Tasks  | 6-1 |
| 6.2.1 Reliability Engineering Tasks                    | 6-2 |
| 6.2.2 Logistic Tasks                                   | 6-3 |
| 6.3 Preface to Task Table                              | 6-5 |
| <b>APPENDIXES</b>                                      |     |
| A Missile-X Program Logistic Element Manager Directory | A-1 |
| B Acronyms and Abbreviations                           | B-1 |
| C Logistic Element Schedule for Reliability Interface  | C-1 |

# 1

## INTRODUCTION

### 1.1 BACKGROUND

In accordance with DoD Directive 4100.35, the promulgating authority of AFR 800-8, and the guidance provided by AFP 800-7, the MX Program Office has implemented an Integrated Logistic Support program for the MX Weapon System. The ILS program, as delineated in the Integrated Logistic Support Plan (ILSP), is intended to ensure that the weapon system is designed with due consideration given to its supportability and that the required support will be attained within an affordable, minimum life cycle cost.

For the MX System, logistic elements – areas of support activity that collectively comprise the management concept of ILS – have been defined. These are:

Maintainability Interface (M)

Reliability Interface (R)

Nuclear Hardness and Survivability Interface (NH&S)

Maintenance Planning (MP)

Support and Test Equipment (SE)

Supply Support (SS)

Transportation and Packaging (T&P)

Technical Data (TD)

Support Facilities (SF)

Personnel and Training (P&T)

Logistic Support Management Information (LSMI)

Logistic Support Resource Funds (LSRF)

For each area of support activity, the MX Program Office has designated a Logistic Element Manager (LEM) responsible for managing the accomplishment of the tasks associated with his element.

## **1.2 PURPOSE**

This document is a Logistic Element Management Plan for the Reliability Interface element. It has been written to provide the R-LEM with guidance in managing that element and ensuring the integration of ILS Reliability requirements into the system design process. This plan, and those developed for the other eleven logistic elements, will become supplementary documents to the ILSP.

## **1.3 MX PROGRAM**

The MX Program has been implemented to provide the technology base for the development of an improved land-based strategic missile weapon system. Efforts are being directed toward the design, development, and deployment of an ICBM system within one of two nuclear hardened, multiple aim point (MAP) basing alternatives. The two currently favored basing options are the buried-trench and shelter-based weapon systems.

Full scale development (FSD) of the MX Weapon System is divided into two major efforts: missile development, including the missile and canister; and weapon system development, which includes the MAP basing hardware, software, and facilities, and the integration of the missile/canister with these equipments and facilities.

2  
**SCOPE**

This Logistic Element Management Plan structures the Reliability Interface logistic requirements of the ILSP into identifiable responsibilities of the R-LEM, and delineates the tasks associated with these responsibilities. The plan is applicable to the FSD phase of the MX Weapon System, with overlap to the preceding validation and system definition phases and succeeding production/deployment phases. The plan applies to all elements of the weapon system, including the air vehicle, support functions, and the selected basing option. In addition, this plan:

- a. Provides an overview of the MX Program management concept, and the LEMs' position in the management structure.
- b. Describes the ILS program and the function of the R-LEM within that program.
- c. Describes the participation of the R-LEM in the ILS Management Information System.
- d. Indicates the interdependencies among tasks and the coordination among all members of the Integrated Logistic Support Management Team (ILSMT), the project element officers (PEOs), and systems engineering.
- e. Presents a basic schedule for the performance of tasks by relating each task to the time frame of major program events.
- f. Indicates the interrelationships of the R-LEM with the remaining logistic elements.

## REFERENCE DOCUMENTS

The following document listing is provided as a reference source relating to the implementation of an ILS program and the Reliability Interface logistic element.

|                               |   |
|-------------------------------|---|
| DoD Directive 4100.35         | Development of Integrated Logistic Support for Systems/Equipment, 1 October 1970                          |
| DoD 4100.35G                  | Integrated Logistic Support Planning Guide for DoD Systems and Equipment, 15 October 1968                 |
| AFR 800-8                     | Integrated Logistic Support (ILS) Program for Systems and Equipment, 27 July 1972                         |
| AFP 800-7                     | Integrated Logistic Support Implementation Guide for DoD Systems and Equipments, March 1972               |
| MIL-STD-1543                  | Reliability Program Requirements for Space and Missile Systems, 10 May 1976                               |
| SAMSO Supplement to AFR 800-8 | Integrated Logistic Support (ILS) Program for Systems and Equipment, 7 September 1976                     |
| ICBM PO ED 77-6               | System Requirements Analysis Programs for the MX Weapon System, 24 May 1977                               |
| ICBM PO ED 77-3               | ICBM Program Office Engineering Directive for the Integrated Test Plan for MX Weapon System, 22 June 1977 |
| ILSP                          | Missile-X Integrated Logistic Support Plan, June 1977   |
| PO Manual                     | ICBM PO Project Officers' Manual, 1 July 1976   |
| SAMSO/MNL Publication         | ILS Management Information System Report, 31 August 1977  |

## PROGRAM MANAGEMENT

Management of the MX weapon system program is the responsibility of the ICBM Program Office. The Program Manager has the overall responsibility for acquisition and integration management of the program, and is supported by the following Directorates within the ICBM Program Office:

- Logistics
- Engineering
- System Acquisition Management Support
- Procurement and Production
- Deployment
- Program Control

The ICBM Program Office comprises a team of Air Force and contractor personnel. That office operates with a functionally decentralized organizational structure, which has resulted in the implementation of the Project Element Management System. In this system, the program is divided into a series of discrete, functional elements, each managed as an entity by a designated Project Element Officer responsible for monitoring the technical, cost, and schedule performance of one or more MX associate contractors. No prime contractor will be designated for the MX Program. Rather, the ICBM Program Office will function as the system integrator.

### 4.1 ILS PROGRAM ORGANIZATION

#### 4.1.1 Deputy Program Manager for Logistics

The Deputy Program Manager for Logistics (DPML) was assigned from HQ AFLC with the concurrence of the MX Program Manager, and serves as the focal point for MX logistics management. The DPML and his organization are an integral part of

the ICBM Program Office and form the Directorate of Logistics (MNL). Within the MX Program, it is the responsibility of the DPML to assure that:

- a. Continuous attention is given to logistic support posture and costs throughout the acquisition process.
- b. Tradeoff studies affecting system design are evaluated to determine their impact on supportability, life cycle cost, and operational requirements.
- c. All objectives of ILS are achieved for the MX Weapon System.

The DPML will draw upon the support of the designated logistic element managers to obtain timely contributions to those system design and support decisions which affect logistic support costs and effectiveness throughout the life of the system.

#### 4.1.2 Logistic Element Managers

As discussed in paragraph 4, the Program Office operates with a functionally decentralized organization structure. This decentralization has positioned ILS elements (as defined by AFR 800-8) outside of the Logistics Directorate, in company with those engineering design elements (e.g., reliability) normally external to the logistics organization. Logistic element managers have been designated within each functional logistic-related area. In addition, the Technical Data and Supply Support elements are further separated into subelements to gain maximum benefits from the decentralized organizational structure. The elements, by Directorate, are shown in Figure 4-1.

The manager for each element is the single point of contact for the DPML in the management of all logistic integration aspects of the assigned element. The LEM assures that the tasks associated with his element, as defined within this Logistic Element Management Plan, are accomplished. He provides liaison and coordination among the other logistic element managers as required for the achievement of integrated logistic support. He further assures that all relevant ILS data are collected, analyzed, reported, and disseminated, as appropriate, for his element. Due to the large number of associate contractors involved, a significant coordination effort will be required by the LEM within his logistic element to maintain cognizance of the activities that impact on logistics.

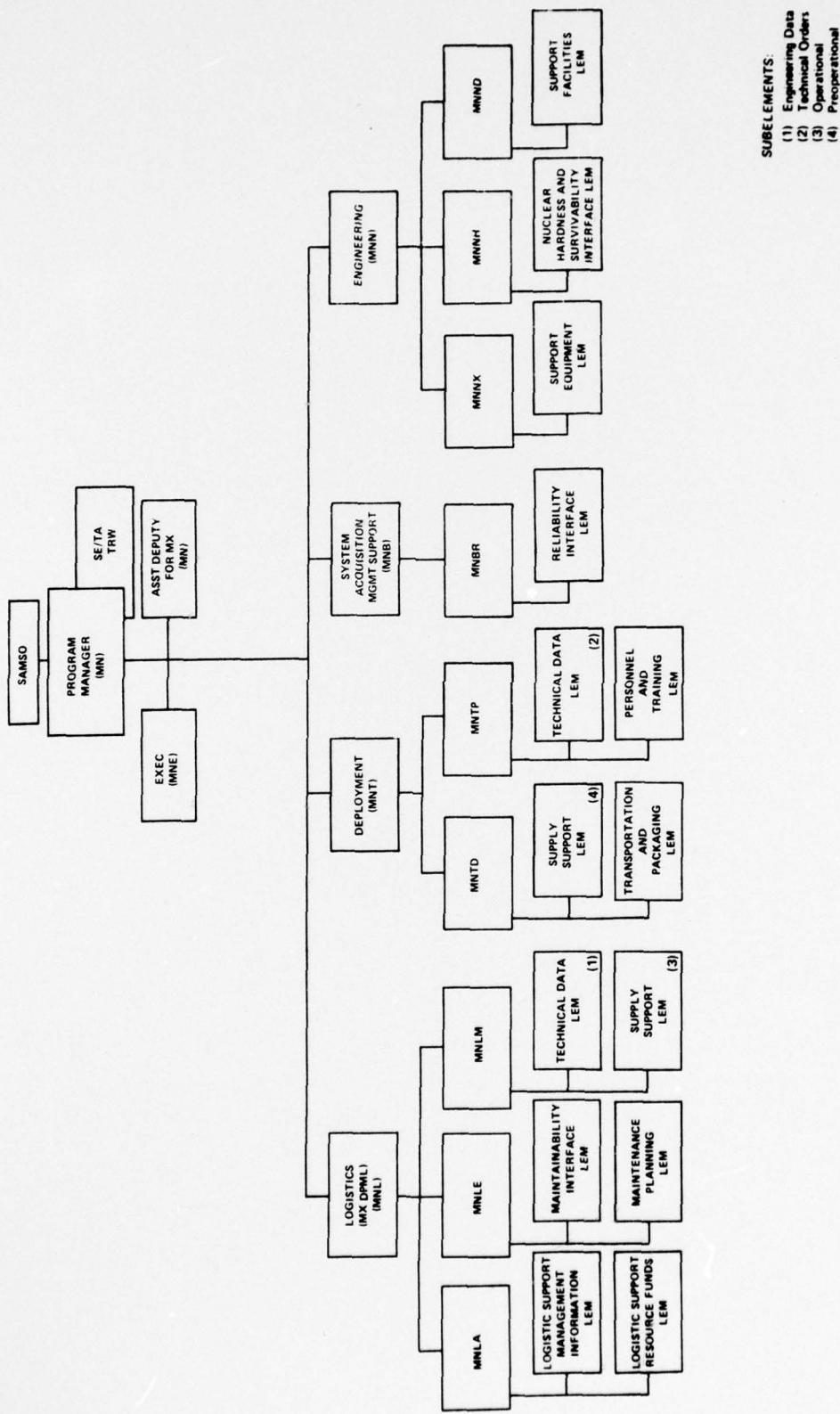


Figure 4-1. MX Program Logistic Element Managers

**Each LEM is a member of the Integrated Logistic Support Management Team, and through active participation as a team member he supports the DPML in managing the accomplishment of the Program Office's acquisition logistics tasks.**

**It is through the exchange of information at ILSMT meetings and the inter-relationships of LEMs that the DPML will acquire the program information necessary to assure the integration of logistic support elements into the total program requirements.**

#### **4.2 ILS MANAGEMENT INFORMATION SYSTEM**

The ILS Management Information System was developed to assist the DPML and all logistic element managers in their efforts to achieve the logistic objectives of the MX Weapon System. Management and direction of the information systems' activities are the responsibility of the DPML. This responsibility is discharged primarily through his position as chairman of the ILSMT and of technical interchange meetings.

Successful implementation of the ILS MIS depends on each LEM's accomplishment of the tasks delineated in his LEM plan, through fulfilling his reporting responsibilities, and through active participation in the ILSMT.

The ILS Management Information System Report dated 31 August 1977 provides a complete description of the ILS MIS and the LEMs' roles in implementing the system. Figure 4-2 depicts the information flow of the ILS MIS, and will serve as an aid in understanding the data input/output and coordination activities of the R-LEM as defined in Sections 5 and 6 of this plan.

In general, much of the management information will involve estimates, or other planning data in which the quality of the data used will vary over some acceptable range. The criteria provided for use by the LEMs in describing the relative quality of MIS data are presented in tables within the Integrated Logistic Support Management Information System Report. Assistance to the LEMs for participating in the ILS MIS, as both contributor and user, will be provided by the Logistic Support Management Information LEM.

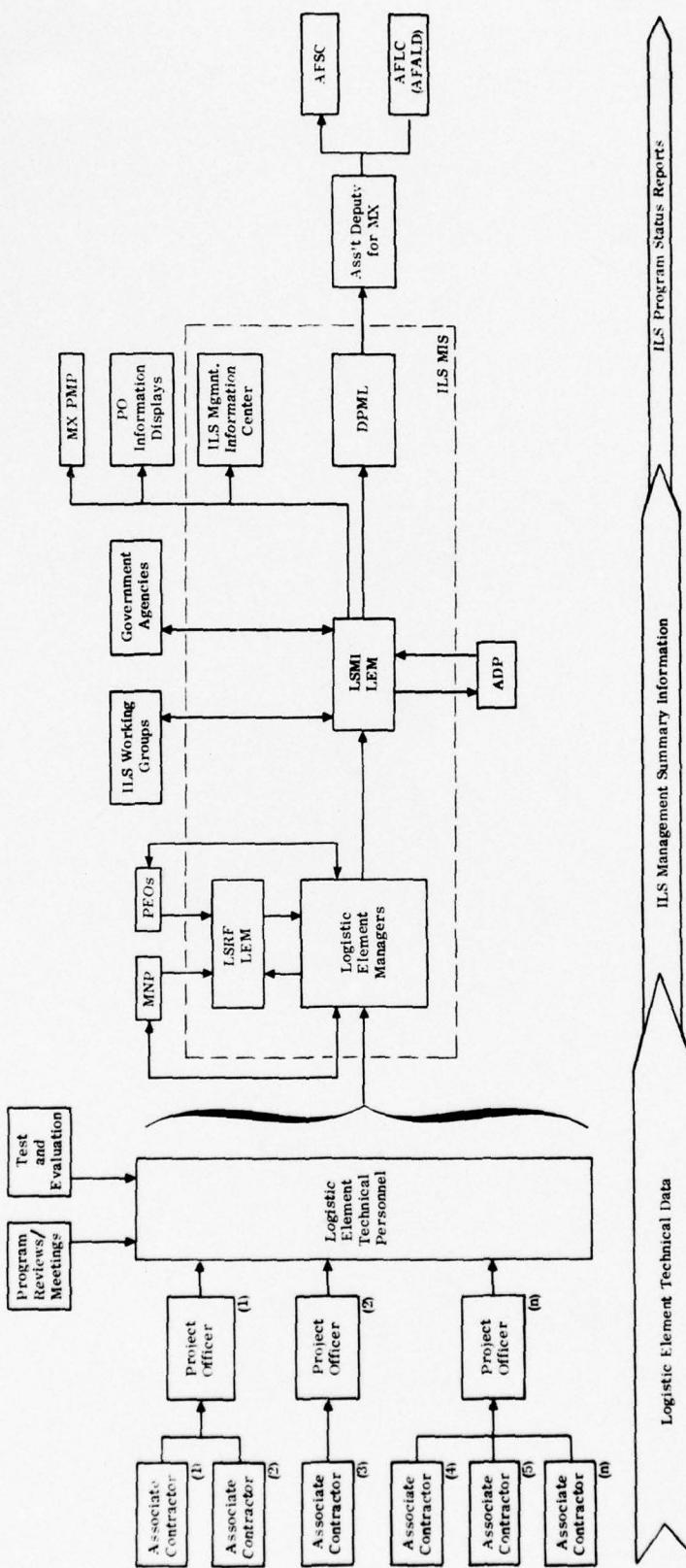


Figure 4-2. Information Flow of the ILS MIS

A typical schedule showing program events for the logistic element addressed in this plan is shown in Appendix C. This schedule depicts the general type of information required as input to the management information system for tracking the progress of each associate contractor in fulfilling the requirements for a specific logistic element. This type of information is also a prerequisite to the LEM's effort of tailoring the task schedule shown in Table 6-1 to each associate contractor's unique development activities.

## GENERAL REQUIREMENTS

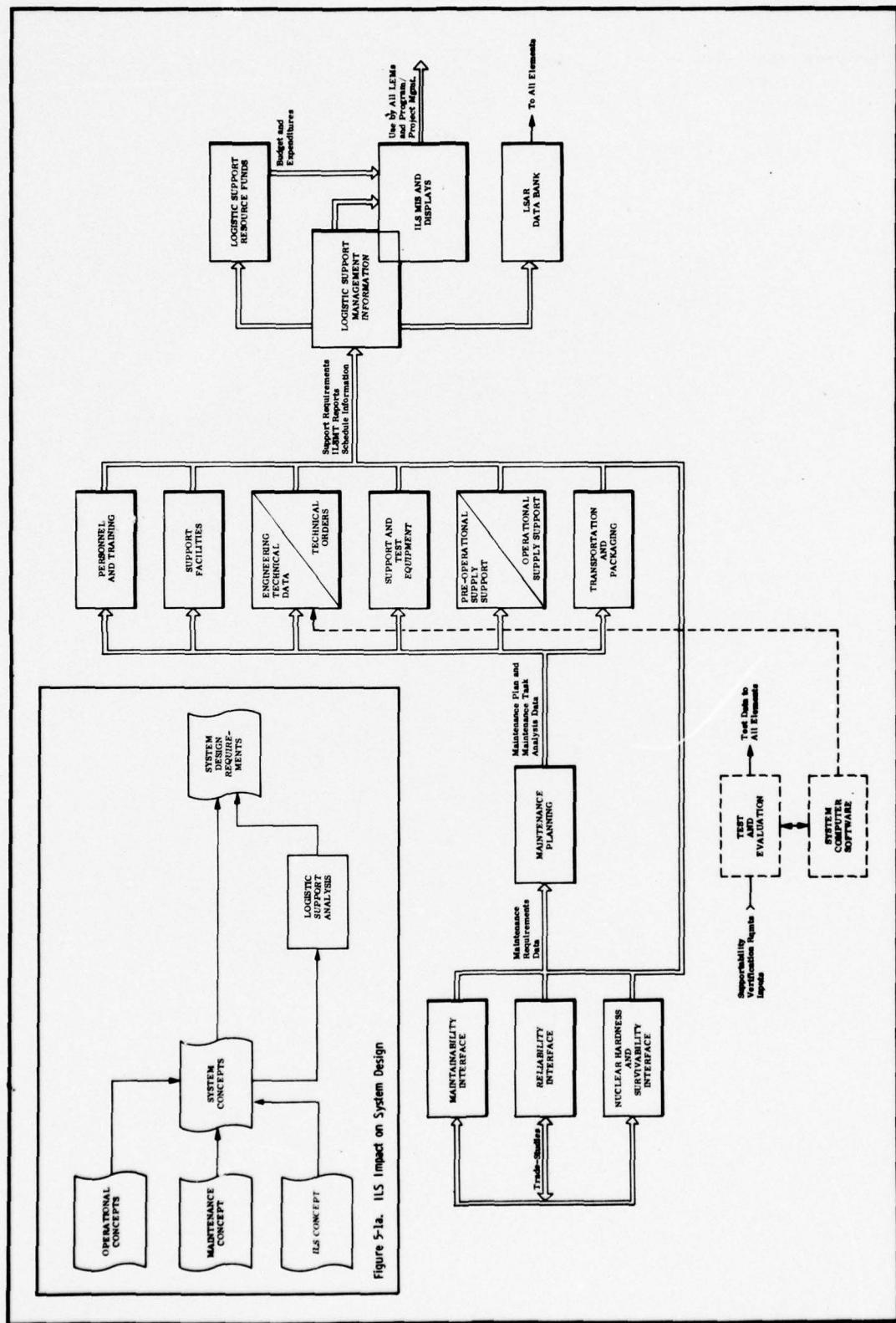
### 5.1 INTEGRATED LOGISTIC SUPPORT PROGRAM

Integrated Logistic Support is a concept that encompasses the total and timely support of a system/equipment, within acceptable life cycle cost criteria, for the duration of its useful life. Realization of this concept is achieved through planning and analysis tasks for the subsequent procurement of all required support as part of the total acquisition process.

An ILS program has been implemented for the MX Weapon System to assure that the ILS concept impacts the system design process in a manner that will improve supportability and control O&S costs. Within the ILS program, logistic elements have been identified (see paragraph 1.1). These elements are areas of support activity which, when collectively considered, provide the basis for the acquisition of the human, material, and financial resources required to maintain a system in an acceptable state of operational readiness within affordable cost criteria.

Essentials of the ILS program include the analysis and definition of quantitative and qualitative logistic support requirements; the prediction of logistic support costs; and the performance of tradeoff studies and evaluations. The responsibility for performance of these efforts rests with the ICBM Program Office and its supporting directorates. However, the responsibility for monitoring and assuring the accomplishment of these efforts has been assigned to the logistic element managers. Each Logistic Element Management Plan delineates the detailed areas of responsibility for a specific LEM.

Figure 5-1 depicts the information flow among the various LEMs during the performance of their ILS efforts. While the information flow will primarily be in the direction indicated by the arrows in that diagram, situations will arise where information must be passed in both directions. Additionally, the information flow might be influenced by variations in logistic information requirements among the configuration end items. Figure 5-1a (Inset in Figure 5-1) indicates that the impact of the ILS concept on the system design is achieved through the logistic support analysis efforts.



**Figure 5-1a.** ILS Impact on System Design

## 5.2 RELIABILITY INTERFACE LOGISTIC ELEMENT

Reliability parameters express the requirements for equipment to perform an intended function for some specified period of time without failure under prescribed use conditions. These parameters are design characteristics of the system/equipment and are expressed quantitatively as probability of success and/or mean time between failure (MTBF). These parameters play an important role during tradeoff and life cycle cost analyses for developing logistic support characteristics compatible with system/equipment operational requirements. Failure predictions provide the fundamental basis for determining the support costs of the system/equipment, and consequently are one of the key elements in determining overall logistic support. Reliability parameters are established as requirements for system, subsystems, and equipments and are subsequently assessed throughout the life of the program to assure that changes in design do not adversely affect reliability and consequently logistic support.

As a logistic element, the Reliability Interface efforts comprise those activities involved in assuring that the impact of reliability on ILS is identified and documented. The R-LEM will assure that system/equipment reliability data are available for use by other logistic elements. The R-LEM will support the LSMI-LEM in preparing the Reliability Interface schedules for each FSD contract. The primary interface relationships of the reliability element are with the maintainability, nuclear hardness and survivability, and maintenance planning elements. These relationships are technically oriented in that parameters common to two or more of the elements are utilized in the functional description and/or analyses of an element. Interrelationships also exist in the form of data requirements such as failure rate information required for the maintenance planning efforts; and physical and environmental constraints for packaging, handling, storage, and transportation of systems/equipment/components/parts. Secondary relationships exist between reliability and technical data, and between reliability and personnel and training. In the first case, technical data can have an adverse effect on reliability in that poorly written or unclear procedures can result in failures being introduced into the system/equipment during the performance of maintenance efforts. In the second case, both the skill levels and the quality of training of personnel impact on system/equipment reliability. Inadequacies in either of these areas can result in reliability degradation. These relationships may vary among the FSD contracts depending upon the system/equipment being procured. The method of

information flow to and from the logistic support management information system will be common to all elements.

In the performance of his assurance functions, the R-LEM will coordinate as necessary with OPRs, reliability engineering, and other LEMs. Additionally, in areas such as test and evaluation and software support that do not have LEM representation, coordination may be required with POs. His membership in the ILSMT will require preparation of status reports, initiation of problem/impact statements, assistance in the development of schedule information for the MIS, and resolution of assigned action items.

## R-LEM RESPONSIBILITIES AND TASKS

### 6.1 RESPONSIBILITIES

The Reliability Interface LEM assists the Deputy Program Manager for Logistics in assuring that the reliability goals associated with integrated logistic support for the MX Weapon System are established and achieved. These responsibilities include:

- a. Assisting the DPML in assuring that the Reliability Interface element of logistics is coordinated for the MX Program.
- b. Assuring that O&S costs are properly considered as an integral part of reliability tradeoff studies.
- c. Establishing lines of communication with each PEO and providing assistance in all matters pertaining to the logistic aspects of reliability.
- d. Providing reliability data inputs to the ILS management information system.
- e. Acting as the reliability representative to the Integrated Logistic Support Management Team.

### 6.2 TASKS

Two types of reliability tasks have been identified for the MX Program: those performed as part of reliability engineering that may impact on logistics; and those performed directly by the R-LEM as part of the ILS program. Each of these task types are discussed below.

### **6.2.1 Reliability Engineering Tasks**

Reliability engineering comprises a variety of activities, many of which result in the development of logistic data. These tasks are performed by MNBR. However, problems identified during their performance that impact on logistics will be presented at the ILSMT meetings by the R-LEM. These tasks include:

- a. Providing systems reliability engineering support for the MX Program, such as tradeoff analyses and life cycle cost studies.
- b. Generating and updating MX reliability requirements and apportioning these requirements among major subsystems.
- c. Incorporating reliability requirements into system specifications, prime item development specifications, and other configuration item specifications.
- d. Ensuring an appropriate reliability input to each contract by developing the reliability requirements for contract SOWs. These requirements will be in accordance with MIL-STD-1543 (USAF), and tailored to each contract depending on the complexity and criticality of the end item procured.
- e. Participating in source selection to ensure that reliability requirements are adequately considered.
- f. Participating in fact-finding and cost proposal activities to ensure the cost effectiveness of the reliability tasks.
- g. Reducing and analyzing operational and test data in order to generate estimates and predictions of achieved reliability.
- h. Performing and/or reviewing studies of system and subsystem problems having impact on reliability.
- i. Participating in SDRs, PDRs, CDRs, FCAs, PCAs, and TI meetings to ensure that system and subsystem designs conform to specified reliability criteria.
- j. Reviewing proposed engineering changes for reliability impact.
- k. Conducting reliability program reviews and technical interchange meetings with contractors to ensure proper implementation of and compliance with the MX Program Office approved reliability program plans.

1. Monitoring and assessing contractors' implementation of required reliability disciplines, to include such tasks as:
  - 1) Generating a Reliability Program Plan and procedures to implement and control reliability tasks
  - 2) Preparing reliability math models and predictions
  - 3) Performing parts selection and application review
  - 4) Evaluating critical item control processes
  - 5) Performing reliability verification.
- m. Maintaining an MX Operational Data Bank for use in reliability analyses and integrated logistic support.
- n. Coordinating the reliability effort with personnel subsystems, safety engineering, maintainability, nuclear hardness and survivability, and other disciplines to assure overall system effectiveness.

#### **6.2.2 Logistic Tasks**

The scope of each of the logistic tasks described in this section must be tailored by the R-LEM for each specific procurement. Consequently, the applicable data items and the amount of coordination and interfacing activities will vary.

During the implementation of this plan, additional tasks may become apparent. It is the responsibility of the R-LEM to assure that these new tasks are planned and scheduled for each applicable procurement. The new tasks should be documented, this plan updated, and the appropriate information provided to the LSMI-LEM for updating the MIS and its information displays.

The following paragraphs describe R-LEM tasks to be performed. Table 6-1 (see Section 6.3) presents a task summary in terms of applicable data, expected coordination required for the tasks, and a schedule relating tasks to major program events. MNBR will support the ILS efforts by assigning a Reliability Interface Logistic Element Manager who will:

- a. Prepare for and support ILSMT meetings. In implementing this effort, the R-LEM will compile status information concerning those reliability tasks that affect logistics; develop schedules for both explicit R-LEM

tasks as well as selected engineering tasks that impact on logistics; conduct reviews of in-house developed LSA summary reports; and perform other actions, as necessary, required for the ILSMT meetings.

- b. Assure that LSAR data sheets are reviewed for reliability content. The R-LEM will coordinate this review effort to ensure completion in a timely manner. The data sheets to be reviewed are:

| <u>Data Sheet</u> | <u>Block No.</u> | <u>Block Title</u> |
|-------------------|------------------|--------------------|
| TBD               | TBD              | TBD                |

The end result of this task will be assurance that LSAR data consider the impact reliability may have on maintainability and hardness maintenance; and that Government- and contractor-prepared LSAR data sheets are reviewed, approved, and input into the LSAR data bank. In performing this task the R-LEM will coordinate with reliability engineering, the M-, MP-, and NH&S-LEMs, and each PEO as appropriate.

- c. Notify the DPML of any identified reliability problems that have an impact on logistics. This task is primarily associated with the reliability engineering efforts listed in paragraph 6.2.1, and reflects a basic requirement to assure that the DPML maintains an awareness of all such problems as well as the status of their resolution. The R-LEM will work with the DPML and other LEMs to resolve these problems.
- d. Support the DPML as necessary in preparation of ILS documentation. In performing this task, the R-LEM will review/develop/update information contained in or to be a part of MX Program documents associated with ILS. Guidance for the performance of this task will be provided by the DPML. The two general types of documents involved in this effort are those developed by the Logistics Directorate in support of the ILS program, and those developed by other organizations that reflect logistic information. Examples of the first type are the ILSP and the Weapon System Maintenance Concept. The second type includes the Program Management Plan and the Integrated Test Plan. The LEM will be responsible for providing the logistic information pertaining to reliability that comprises a part of each applicable document. This

effort will also require coordination with reliability engineering; OPRs for each document; and, as appropriate, other LEMs.

- e. Assure that an Operational Support Planning Failure Rates document is developed and updated in coordination with the SS-LEM's stated requirements. Preoperational and operational failure rates are prepared for use in ILS planning. These failure rates can have a direct influence on supply support in terms of spare and repair parts needed, support and test equipment required at the various maintenance locations, and support facilities necessary for repair of MX hardware. Both direct and indirect influences may also exist between these failure rates and other logistic elements.

### 6.3 PREFACE TO TASK TABLE

Table 6-1 lists the tasks discussed in Section 6.2.2, together with the corresponding data items and coordination required in the performance of the tasks. The schedule shown in the table indicates the availability dates of data items relative to major program milestones. The R-LEM will assist the LSMI-LEM in the preparation of schedules for the completion of the tasks applicable to each configuration end item, using contract award dates as the basis for assigning calendar dates to each schedule.

TABLE 6-1. RELIABILITY LEM TASKS

| Tasks   | Applicable Data Items  | Coordination   | Milestone Schedule |                |     |     |     | Production Release |
|---|--|--|--------------------|----------------|-----|-----|-----|--------------------|
|   |  |  | RFP Release        | Contract Award | SDR | PDR | CDR |                    |
| a. Prepare for and support ILSMT meetings.  | 1. LSAR sheets<br>2. FMA reports<br>3. In-house generated LSAR summaries<br>4. TPA<br>5. Engineering data<br>6. LCC/DTC reports (UF-7-SAMSO)       | M-, MP-, NH&S-LEMs, reliability engineering, each PEO, other LEMs as appropriate |                    |                |     |     |     |                    |
| b. Assure that LSAR data sheets are reviewed for reliability content.                           | 1. LSAR sheets<br>2. SRA data<br>3. System design analysis report (S-3581)   | M-, MP-, NH&S-LEMs, reliability engineering, each PEO                            |                    |                |     |     |     |                    |
| c. Notify DPML of identified reliability problems impacting logistics.                          | 1. LSAR summary reports<br>2. ECPS (E-3128/M)<br>3. Deviation waiver request (E-3129M)   | DPMI, other LEMs as necessary  |                    |                |     |     |     |                    |
| d. Support DPML as necessary in preparation of ILS documentation.                               | 1. Parts, materials, and processor application data<br>2. Critical Item Control Plan<br>3. Reliability allocation assessment, and analysis reports |  |                    |                |     |     |     |                    |
| e. Assure that an Operational Support Planning Failure Rates document is developed and updated. | 1. ILSP<br>2. Maintenance concept<br>3. ITP<br>4. R-LEM plan   | Reliability engineering, OPR for each document, applicable LEMs                  |                    |                |     |     |     |                    |
|   | In-house generated data  | Initial Issue  |                    |                |     |     |     |                    |
|   |  | Update quarterly   |                    |                |     |     |     |                    |

## **APPENDIXES**

|  |            |
|--|------------|
| <b>Appendix A: Missile-X Program Logistic Element Manager Directory . . .</b>    | <b>A-1</b> |
| <b>Appendix B: Acronyms and Abbreviations . . . . . . . . . . . . . . .</b>      | <b>B-1</b> |
| <b>Appendix C: Logistic Element Schedule for Reliability Interface . . . . .</b> | <b>C-1</b> |

**APPENDIX A**

**MISSILE-X PROGRAM  
LOGISTIC ELEMENT MANAGER DIRECTORY  
Col. L.E. Eklund, DPML**

| Logistic Element                             | Manager                  | Code  | Ext. | Room |
|--|--------------------------|-------|------|------|
| Reliability Interface                        | Capt. T.M. Palmer        | MNBR  | 5359 | 421  |
| Maintainability Interface                    | Capt. A.D. Wadsworth     | MNLE  | 4523 | 619  |
| Nuclear Hardness and Survivability Interface | Capt. W.R. Jacobs        | MNNH  | 7843 | 711  |
| Maintenance Planning                         | Lt. Col. R.W. Ayars      | MNLE  | 4523 | 619  |
| Support Equipment                            | Lt. Col. B.W. Woolverton | MNNX  | 7005 | 138  |
| Supply Support (Preoperational)              | Mr. F.C. O'Connor        | MNTD  | 6481 | 600  |
| Supply Support (Operational)                 | Mr. J.A. Davidson        | MNL M | 5321 | 621  |
| Transportation and Packaging                 | Mr. R.W. Riggs           | MNTD  | 5474 | 600  |
| Technical Data (Engineering)                 | Mr. L.E. Onstott         | MNL M | 5321 | 621  |
| Technical Data (Technical Orders)            | Maj. L.W. Cooper         | MNTP  | 6684 | 609  |
| Support Facilities                           | Mr. F.E. Longan          | MNN D | 6891 | 408  |
| Personnel and Training                       | Maj. L.W. Cooper         | MNTP  | 6684 | 609  |
| Logistic Support Resource Funds              | Capt. H.B. Robbins       | MNLA  | 5395 | 623  |
| Logistic Support Management Information      | Mr. J.L. Peterson        | MNLA  | 5386 | 623  |

**APPENDIX B**  
**ACRONYMS AND ABBREVIATIONS**

|       |   |
|-------|---|
| A&CO  | — Assembly and Checkout                       |
| ADP   | — Automatic Data Processing                   |
| AFALD | — Air Force Acquisition Logistics Division    |
| AFLC  | — Air Force Logistics Command                 |
| AFSC  | — Air Force Systems Command                   |
| AFTEC | — Air Force Test and Evaluation Center        |
| BTWS  | — Buried Trench Weapon System                 |
| C/A   | — Contract Award                              |
| CDR   | — Critical Design Review                      |
| CDRL  | — Contract Data Requirements List             |
| CDRS  | — Contract Data Requirements Substantiation   |
| CDSR  | — Cost Data Summary Report                    |
| CEI   | — Configuration End Item                      |
| CFSR  | — Contract Funds Status Report                |
| CPR   | — Cost Performance Report                     |
| DPML  | — Deputy Program Manager for Logistics        |
| DT&E  | — Development Test and Evaluation             |
| FCA   | — Functional Configuration Audit              |
| FCHR  | — Functional Cost Hour Report                 |
| FMA   | — Failure Mode Analysis                       |
| FSD   | — Full Scale Development                      |
| ICBM  | — Intercontinental Ballistic Missile          |
| IOT&E | — Initial Operational Test and Evaluation     |
| ILS   | — Integrated Logistic Support                 |
| ILSMT | — Integrated Logistic Support Management Team |
| ILSP  | — Integrated Logistic Support Plan            |
| ISP   | — Integrated Support Plan                     |
| ITP   | — Integrated Test Plan                        |
| LEM   | — Logistic Element Manager                    |

**LSA** — Logistic Support Analysis  
**LSAR** — Logistic Support Analysis Record  
**MDR** — Missile Design Review  
**MIC** — Management Information Center  
**MIS** — Management Information System  
**MPP** — Maintainability Program Plan  
**MTBF** — Mean Time Between Failures  
**MTTR** — Mean Time to Repair  
**MX** — Missile-X  
**OPR** — Office of Primary Responsibility  
**OT&E** — Operational Test and Evaluation  
**PCA** — Physical Configuration Audit  
**PDR** — Preliminary Design Review  
**PEO** — Project Element Officer  
**PMP** — Program Management Plan  
**PO** — Project Officer  
**RPP** — Reliability Program Plan  
**SAMSO** — Space and Missile Systems Organization  
**SBWS** — Shelter Based Weapon System  
**SDR** — System Design Review  
**SOW** — Statement of Work  
**SRA** — System Requirements Analysis  
**T&E** — Test and Evaluation  
**TI** — Technical Interchange  
**TPA** — Test Planning Analysis

**APPENDIX C**  
**RELIABILITY INTERFACE ELEMENT SCHEDULE**

|   | Validation / System Definition               | Full Scale Development  | Production/Deployment              |
|---|--|---|------------------------------------|
| Major Subsystem Milestones                      | C/A      MDR $\Delta$                        | SDR $\Delta$<br>PDR $\Delta$<br>CDR $\Delta$<br>FCA $\Delta$  | Flight tests<br>$\Delta$ MAP Tests |
| 1. Rel. Program Plan                            | Initial $\Delta$<br>Updates IAW RPP schedule | Plan      Data reviews/meetings (monthly)<br>Plan      Data reviews/meetings (monthly)<br>(Quarterly) | IOC<br>$\Delta$                    |
| 2. Parts, Materials & Processes Standardization |  |   |                                    |
| 3. Rel. Alloc., Assess. and Analysis Reports    |  |   |                                    |
| 4. SRA/LSA/Des. Rev. Data                       |  |   |                                    |
| 5. Rel. Assess. and Demo.                       |  |   |                                    |
| 6. System Level Tests                           |  |   |                                    |
| 7. Failure Summary Reports                      |  |   |                                    |
| 8. Develop Prop. Support Planning Failure Rates |  |   |                                    |

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of the Logistic Element Manager for the Reliability Interface. It has been written to assist him in fulfilling his responsibilities toward achieving the ILS objectives of the MX Program.

The majority of information contained in Sections 1 through 4 herein is common to all plans. Sections 5 and 6 present information pertinent to the R-LEM's efforts.